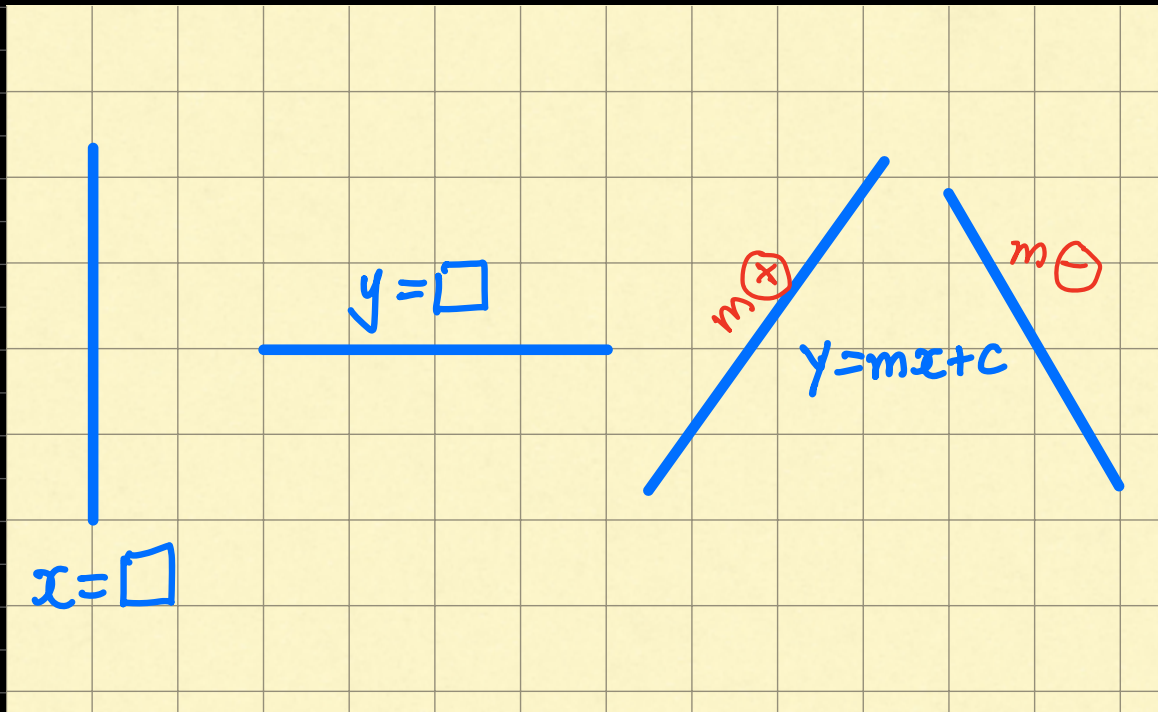
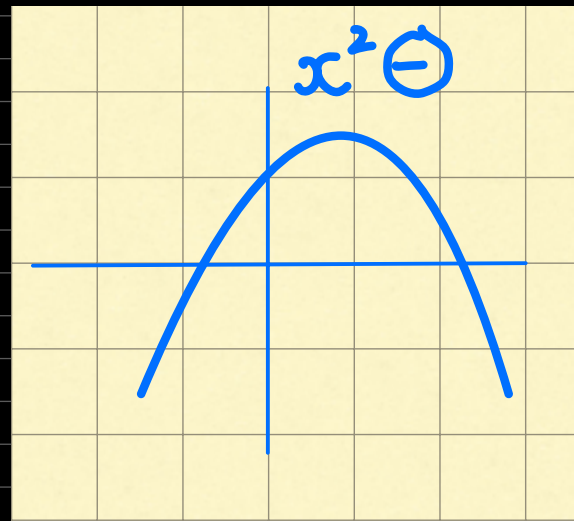
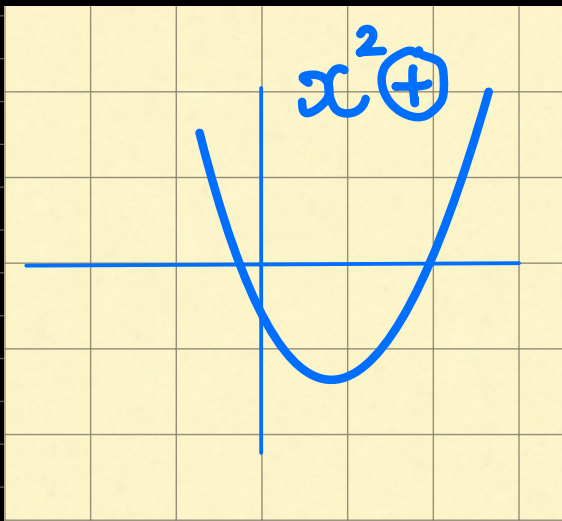


GRAPHS OF FUNCTIONS

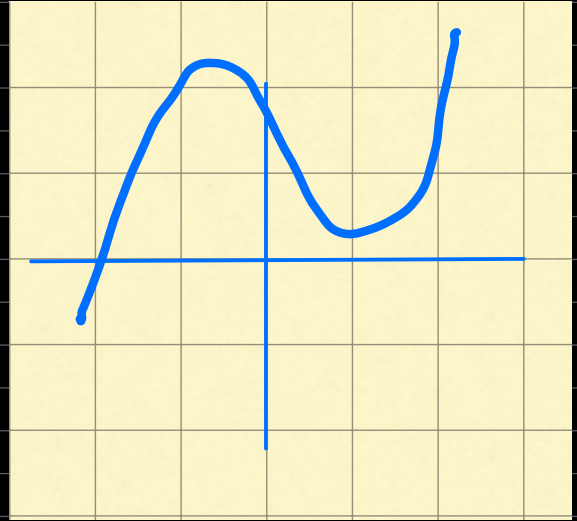
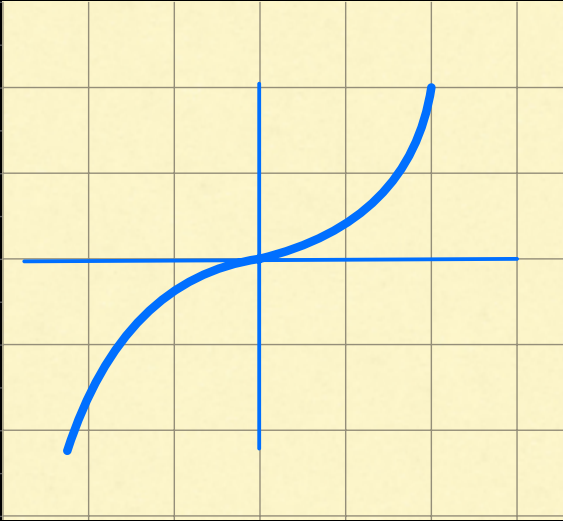
LINEAR (STRAIGHT LINES)



QUADRATIC (x^2)

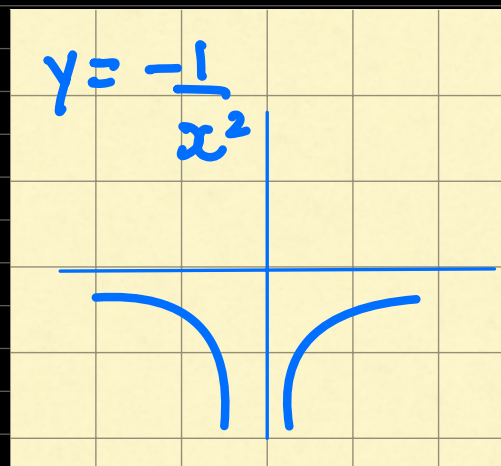
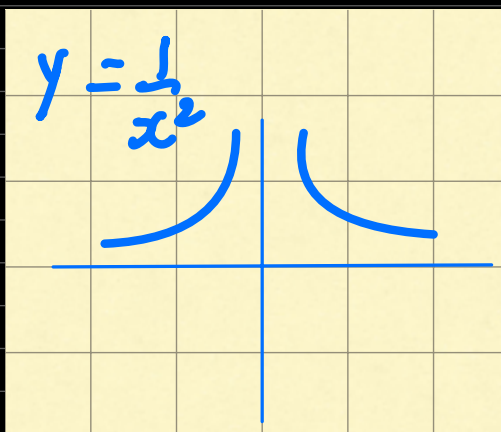
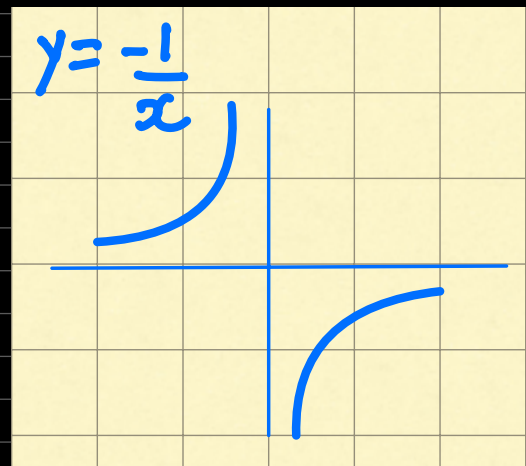
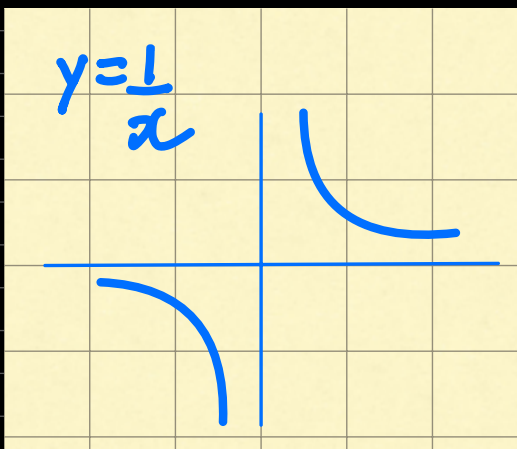


CUBIC (x^3)



0 Levels Dummies do not need to know the difference between these two.

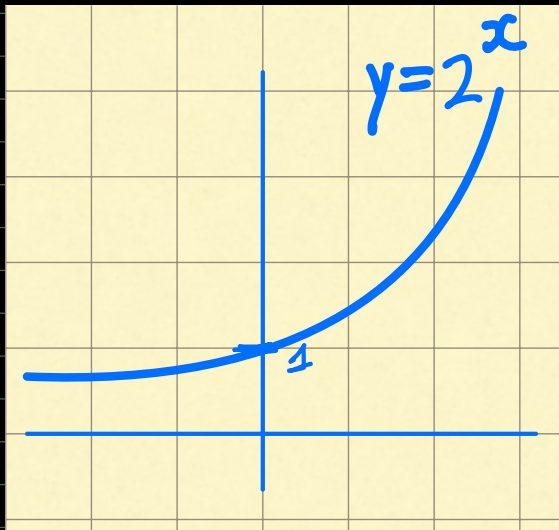
RECIPROCAL



EXPONENTIAL

(when we have x in power)

$$y = \square^x$$



$$y = 2^x$$

$$y = 3^x$$

$$y = 10^x$$

STEPS FOR IDENTIFICATION

- 1) SHAPE
- 2) Find y -intercept by putting $x = 0$
- 3) Find x -intercept by putting $y = 0$

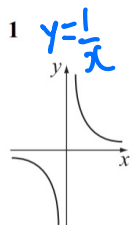


Figure 1

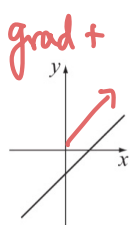


Figure 2

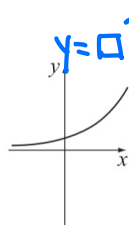


Figure 3

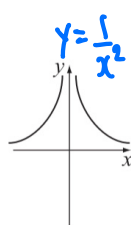


Figure 4

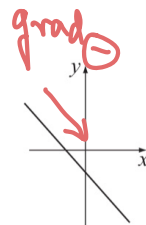


Figure 5

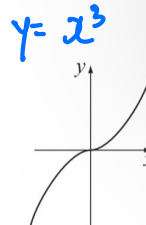


Figure 6

Which of the graphs shown above could be the graph of

(a) $y = x^3$, $\rightarrow$ Figure 6

(b) $y = \frac{1}{x^2}$, $\rightarrow$ Figure 4

(c) $y = x - 1$? $\rightarrow$ Figure 2

↓
Line
↓
Slant

$y = 1x - 1$
 $y = mx + c$
grad = +ve

Answer (a) Figure [1]

(b) Figure [1]

(c) Figure [1]

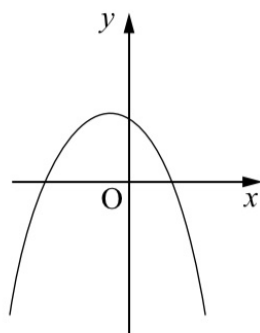


Figure 1

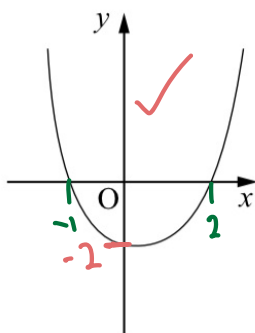


Figure 2

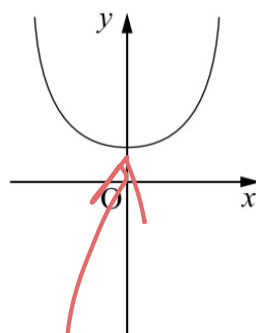


Figure 3

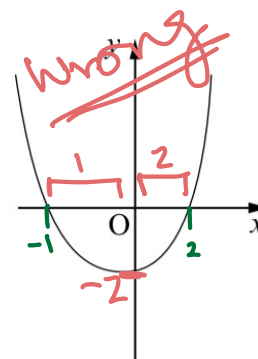


Figure 4

Which of the figures shown above could be the graph of

(a) $y = x^2 + 2$



y -intercept

$$x = 0$$

$$y = 0^2 + 2$$

$$y = 2$$

Answer (a) Figure [1]

(b) $y = (x - 2)(x + 1)$

$$y = x^2 - 2x + x - 2$$



y -intercept

$$x = 0$$

$$y = (0 - 2)(0 + 1)$$

$$y = (-2)(1) = -2$$

x -intercept: $y = 0$

$$0 = (x - 2)(x + 1)$$

$$x - 2 = 0$$

$$x = 2$$

or

$$x + 1 = 0$$

$$x = -1$$

Answer (b) Figure [1]

(c) $y = 2 - x - x^2$

Figure 1

Answer (c) Figure [1]

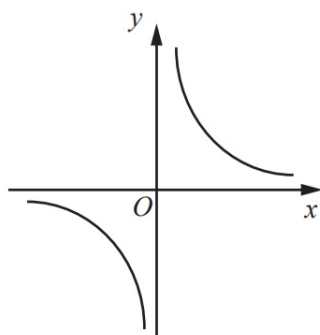


Figure A

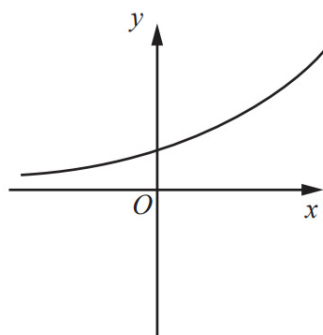


Figure B

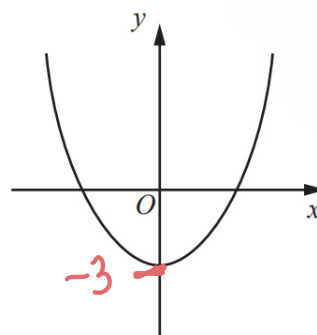


Figure C

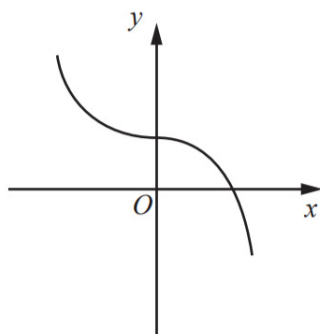


Figure D

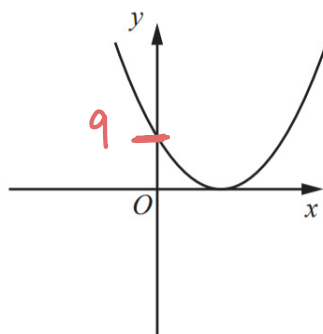


Figure E

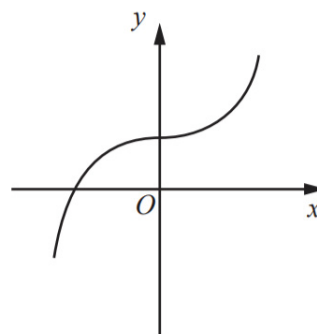


Figure F

State which figure could be the graph of

(a) $y = x^3 + 1$,

Answer Figure F [1]

Quadratic (b) $y = x^2 - 3$,
 For y-int, $x=0$
 $y = 0^2 - 3$
 $y = -3$

Answer Figure C [1]

(c) $y = 3^x$,

Answer Figure B [1]

Quadratic (d) $y = (x-3)^2$.
 $x^2 - 6x + 9$
 For y-int, $x=0$
 $y = (0-3)^2 = (-3)^2 = +9$
 $y = 9$

Answer Figure E [1]